

## **REMARKS**

### **Claim amendments**

Claim 32 has been amended herein, wherein support for this amendment can be found throughout the application as originally filed, for example Figure 5 and page 14. Applicant asserts that these amendments do not introduce new matter within the meaning of 35 U.S.C. §132.

### **Title**

Applicant has changed the title to "Optical Irradiation Device Having LED and Heat Pipe" as requisitioned by the Examiner.

### **Claim Objections**

#### **Rejection under 35 U.S.C. 102**

The Examiner stated that claims 32 to 38 currently on file, are rejected under 35 U.S.C. 102(b), alleging that these claims are anticipated by United States Patent No. 4,729,076 to Masami *et al.*, herein after referred to as Masami. The Examiner alleged that all the limitations of these claims are disclosed by Masami.

Without conceding to the correctness of the Examiner's objection, but in order to expedite prosecution, Applicant has amended claim 32 herein in order to further define the scope of protection being sought. In particular, claim 32 has been amended to recite that "each of the one or more LEDs are proximate to an end of one of the one or more heat pipes" and that the optical irradiation device comprises "a unitary thermal connector directly connecting the one or more LEDs and the one or more heat pipes".

Applicant asserts that nothing in Masami discloses that "each of the one or more LEDs are proximate to an end of one of the one or more heat pipes" as expressly defined in independent

claim 32 submitted herewith. In fact as illustrated in Figure 5 Drawing (E) (1) Masami discloses that the heat absorber is positioned in a central location relative to the LEDs arrayed in a plane and therefore the LEDs positioned relative to the perimeter of this plane are not proximate to the end of the heat absorber as disclosed by Masami. In addition, having regard to Figure 5 Drawings (E) and (F) and column 3, lines 1 to 5, Masami additionally discloses that "heat generated by the light units can be ... gathered into heat absorber common to the light units" and as such the LEDs are positioned relative to the side of the heat absorber, which is in direct contrast to that as is expressly defined in independent claim 32, submitted herewith.

In further support of this stance and with reference to page 9, last paragraph, the instant application discloses that the cross section of an LED cluster is configured to be more compact than would typically be possible based on a conventional approach at the time of filing. This more compact configuration of an LED cluster may further enable each of the one or more LEDs to be positioned proximate to an end of a heat pipe as is expressly defined in independent claim 32, submitted herewith.

Applicant asserts that nothing in Masami teaches or suggests that "each of the one or more LEDs are proximate to an end of one of the one or more heat pipes" as expressly defined in claim 32 submitted herewith.

Furthermore, Applicant asserts that Masami discloses that there are multiple components which are positioned between the LEDs and the heat sink or heat absorber. For example, having regard to Figure 4 and column 2, lines 15 to 22, Masami specifically defines that between the LEDs and the heat sink are positioned at least a printed circuit board (PCB) to which the LEDs are connected, wherein the PCB is encapsulated by a resin filler thereby securing the LEDs thereto. Masami further defines that between the resin filler and the heat sink is positioned an insulation sheet. Therefore, as explicitly taught by Masami, multiple components are positioned between the heat sink and the LEDs, wherein these multiple components include at least a PCB, a resin filler and an insulation sheet.

The provision of multiple components between the LEDs and the heat sink or heat pipe as taught by Masami is in direct contrast to that as claimed in independent claim 32, submitted herewith. In particular, claim 32 submitted herewith, explicitly defines that the one or more LEDs and the one or more heat pipes are directly connected by a unitary thermal connector.

Applicant therefore asserts that Masami does not disclose a unitary thermal connector directly connecting the one or more LEDs and the one or more heat pipes, as is explicitly defined in independent claim 32, submitted herewith.

Based on the above, Applicant asserts that independent claim 32 is novel in light of Masami. Applicant further asserts that as claims 33 to 38 are directly or indirectly dependent on claim 32, these dependent claims are equally novel over Masami. Applicant therefore asserts that claims 32 to 38, submitted herewith are novel over Masami, and respectfully requests that the Examiner withdraw this 35 U.S.C. 102(b) objection.

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Mills and Jandt  
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Filed: May 30, 2000  
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**Conclusion**

In view of the foregoing amendments and remarks, Applicants submit that the claims are in condition for allowance, and a notice to that effect is respectfully requested. The Examiner is invited to contact Applicant's undersigned representative if there are any questions relating to this application.

A check in the total amount of \$450.00 is enclosed to cover the two-month Extension of Time fee. A check in the amount of \$500.00 is enclosed to cover the Notice of Appeal fee. No additional fee is believed necessary with the filing of this paper. However, the Commissioner is hereby authorized to charge any fees that are required, or credit any overpayments to Deposit Account No. 07-1896 referencing the above-identified attorney docket number. A copy of the Transmittal Sheet is enclosed.

Respectfully submitted,

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